

ABSTRACT

An actuator includes a casing, a stationary member having a coil member and mounted in the casing and a movable member having a moving element and supported by the casing. The moving element has a shaft and is supported by the casing so as to be moved in an axial direction of the shaft and in a rotational direction having the axial direction of the shaft as its rotational axis and the moving element is moved in the axial direction and in the rotational direction by causing electric current to flow through the coil member. The stationary member includes a first stationary member for imparting to the movable member a force oriented in the axial direction and a second stationary member for imparting to the movable member a force oriented in the rotational direction, while the coil member includes a first coil member for exciting a first magnetic path passing through the first stationary member and a second coil member for exciting a second magnetic path passing through the second stationary member.